

AMENDMENTS TO THE CLAIMS

1. (Previously presented) A repeated pattern layer for a pixellated light modulating device comprising a cell having a light modulating medium and a plurality of electrodes defining pixels, and further comprising a plurality of switching regions within each repeat unit, wherein each switching region is arranged to impart one of at least two predetermined electro-optic characteristics to said light modulating medium wherein the repeat unit length is less than half the length of the minimum pixel dimension and wherein each pixel contains areas of each electro-optic characteristic in substantially the same relative proportion as any other pixel.

2. (Original) A repeated pattern layer as claimed in claim 1 wherein the switching regions are arranged in a repeat unit as a two dimensional grid.

3. (Original) A repeated pattern layer as claimed in claim 2 wherein the grid is arranged such that the switching regions are varied in both of said two dimensions.

4. (Previously presented) A repeated pattern layer as claimed in claim 3 wherein grid is arranged such that any line through the grid substantially parallel to one of the grid dimensions intersects substantially the same proportion of areas of each electro-optic characteristic.

5. (Previously presented) A repeated pattern layer as claimed in claim 3 wherein the grid may be formed by a regular array of switching regions arranged in rows and columns and wherein each row and each column contains one or more of switching regions of each electro-optic characteristic in the same proportion.

6. (Previously presented) A repeated pattern layer as claimed in claim 5 wherein the relative numbers of switching regions of each characteristic in each row and column are weighted with respect to each other.

7. (Previously presented) A repeated pattern layer as claimed in claim 5 wherein each row and column contains one switching region of each electro-optic characteristic.

8. (Original) A repeated pattern layer as claimed in claim 2 wherein the grid has a repeat unit that is rectangular.

9. (Withdrawn) A repeated pattern layer as claimed in claim 1 wherein the repeated pattern layer comprises an alignment layer for a liquid crystal device.

10. (Withdrawn) A repeated pattern layer as claimed in claim 9 wherein the different electro-optic characteristic is a different alignment direction.

11. (Withdrawn) A repeated pattern layer as claimed in claim 10 wherein the proportion of switching regions having a first alignment direction is significantly greater than the proportion of switching regions having a different alignment direction.

12. (Withdrawn) A repeated pattern layer as claimed in claim 9 wherein each switching region having a different switching characteristic comprises an alignment grating having a different grating property.

13. (Withdrawn) A repeated pattern layer as claimed in claim 12 wherein the different grating property is pitch of the grating.

14. (Withdrawn) A repeated pattern layer as claimed in claim 12 wherein each alignment grating is a zenithally bistable liquid crystal alignment grating.

15. (Withdrawn) A light modulating device comprising a cell containing a light modulating medium, the cell having a plurality pixel areas wherein the cell comprises an repeated pattern layer according to claim 1.

16. (Withdrawn) A light modulating device as claimed in claim 15 wherein the light modulating medium is a liquid crystal material.

17. (Withdrawn) A light modulating device as claimed in claim 16 wherein the patterned layer is located between a liquid crystal alignment layer and the device electrodes and

wherein the patterned layer comprises a dielectric layer wherein each switching region has a different dielectric property so as to alter the voltage applied to the liquid crystal material.

18. (Withdrawn) A light modulating device as claimed in claim 17 wherein the different dielectric property is thickness and/or dielectric constant of the dielectric material.

19. (Withdrawn) A light modulating device as claimed in claim 15 wherein the patterned layer comprises a layer of retardation films and the differing electro-optic characteristic of the switching regions is the orientation of the retardation axis and/or the magnitude of retardation.

20. (Withdrawn) A method of fabricating a light modulating device comprising the steps of;

forming a patterned layer having a plurality of switching regions, wherein each switching region is arranged to impart one of at least two predetermined electro-optic characteristics to a light modulating medium and wherein the switching regions are arranged such that any pixel area on the patterned layer above a certain size comprises switching regions of each switching characteristic in substantially the same relative proportion as any other pixel area, and

combining said patterned layer in a cell comprising a light modulating medium and a plurality of electrodes forming a plurality of pixel areas wherein said combination step does not involve a mask alignment step.

21. (Withdrawn) A method according to claim 20 wherein the light modulating device is a liquid crystal device.

22. (Withdrawn) A method according to claim 21 wherein each switching region has an alignment grating and wherein the properties of the grating are varied in order to impart the various electro-optic characteristics.

23. (Withdrawn) A method according to claim 22 wherein the property of the grating varied in the different alignment regions is the grating pitch.

24. (Withdrawn) A method according to claim 22 wherein the method of forming the alignment layer comprises embossing a master grating bearing a negative of the required alignment layer into a conformal layer and curing the conformal layer.

25. (Previously presented) A repeated pattern layer as claimed in claim 1 wherein the repeat unit length is less than a third of the length of the minimum pixel dimension.

26. (Previously presented) A repeated pattern layer as claimed in claim 1 wherein said electrodes defining the pixels are not substantially aligned with edges of a repeat unit.

27 (New) A repeated pattern layer as claimed in claim 1 wherein the at least two predetermined electro-optic characteristics comprise a switching threshold for switching between optical states.

28 (New) A repeated pattern layer as claimed in claim 27 wherein the only variation in electro-optic characteristics between switching regions is the switching threshold.

29 (New) A repeated pattern layer as claimed in claim 28 wherein the variation between electro-optic characteristics imparted by different switching regions allows separate switching of the light modulating medium so as to allow greyscale within a pixel.